

BARTOLOTTI S.N. 09/885,464

REMARKS

A proposed drawing correction is submitted for Figures 1, 2 and 4 designating these figures as prior art. In addition, a proposed drawing correction is submitted for Figure 3 that shows the flux lines defined by the magnetic trace.

Regarding the drawing objection to Figures 2, 3, 4 and 5 for not showing a decreased bulk along the direction of motion, this objection is respectfully traversed.

Figures 2 and 3, and 4 and 5 compare bulk in the direction of motion of the space occupied by the phase coils. By including six magnets in both Figures 2 and 3, a ready comparison can be seen by noting the space or bulk occupied by the phase coils 3i in Figure 3 with the phase coils 13i in Figure 2. This is also shown by comparing Figures 4 and 5 wherein the coils in Figure 4 occupy nearly the entire length of the magnets while the coils in Figure 5 occupy only one-third of the space of that of the coils in Figure 4. Accordingly, applicant believes that Figures 3 and 5 show a decrease in bulk in the direction of motion as compared to prior art Figures 2 and 4.

The phrase "the three-phase linear motors are marked in their aggregate" means that the three coils 13a, 13b and 13c of Figure 2 are drawn together as a single coil for each of the stations M1, M2, M3 and M4 in Figure 4. That is, each of

BARTOLOTTI S.N. 09/885,464

stations M1, M2, M3 and M4 has all three coils that are shown aggregated or combined together as a single coil.

Regarding the arrangement of the linear motors 11 in Figure 4, there does not appear to be a difference between side by side as used in Figure 4 and end to end as interpreted by the Examiner. However, for the sake of clarity the specification has been amended to change "side by side" to "end to end".

A substitute Abstract of the Disclosure is provided on an accompanying separate sheet.

Claims 1-3 are present in the application. Applicant would like to thank the Examiner for indicating that claim 2 is allowable.

Regarding the phrase "magnetic trace", applicant defines a magnetic trace as a set of magnets located along the motion line of a mobile element (or coil) interacting with a set of magnets. The magnetic trace defines the flux lines. As indicated in Figure 8 of GOLDIE et al. 5,495,131, the flux lines are element 160. As shown in Figure 3 and as recited in claim 2 of the present application, each phase coil acts on a different magnetic trace that is not the same as those of other phase coils. That is, each single phase coil interacts in an independent way with its own magnetic trace as indicated by the flux lines in Figure 3.

Claim 1 is rejected as anticipated by GOLDIE et al. This rejection is respectfully traversed.

BARTOLOTTI S.N. 09/885,464

Claim 1 recites that the phase coils lie on an axis that is perpendicular to the direction of motion.

By way of example, Figure 3 of the present application shows phase coils 3a, 3b and 3c that lie on axis L. Axis L is perpendicular to the direction of motion indicated by the arrow adjacent X.

The Official Action states that GOLDIE et al. show coils parallel to the direction of motion and perpendicular to the direction of motion. This assertion is not supported by the reference. Figures 7 and 8 of GOLDIE et al. show windings 142. These windings or phase coils are parallel to the indicated movement direction (shuttle motion) of GOLDIE et al. Please see Figure 8 as marked up by applicant showing the phase coils along lines "A". GOLDIE et al. at column 3, line 61, column 4, line 45 and column 4, lines 66-67 for example, disclose that there are a plurality of electrical windings on each stator. Column 8, line 56 discloses stators 132, 134 and 136. As further disclosed at column 8, lines 56 through 58, the stator 132 includes a plurality of teeth 138 separated by slots 140 in which are located the windings 142. Accordingly, as seen in Figures 7 and 8 of GOLDIE et al., each stator includes a plurality of phase coils that are parallel to the indicated movement direction (shuttle motion of Figure 8). As the reference does not disclose that which is recited, the anticipation rejection is not viable.

BARTOLOTTI S.N. 09/885,464

Reconsideration and allowance of claim 1 are respectfully requested.

Claim 4 includes the same features of claim 1 except that the phase coils only lie on an axis that is perpendicular to the direction of motion. The comments above regarding claim 1 are equally applicable to claim 4.

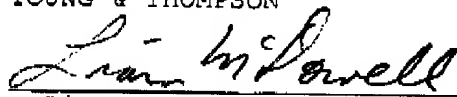
In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Attached hereto is a marked-up version of the changes made to the abstract, specification and claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

YOUNG & THOMPSON

By



Liam McDowell
Attorney for Applicant
Registration No. 44,231
745 South 23rd Street
Arlington, VA 22202
Telephone: 521-2297

January 3, 2003

BARTOLOTTI S.N. 09/885,464

VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE ABSTRACT:

A multi-phase linear motor [(1) that comprises] includes a number of magnets [(2i)] side by side with multiple phase coils [(3i)] in which alternating currents that are offset by a predetermined value are made to flow[, whereby the] The interaction between [said] the magnets [(2i)] and [said] the phase coils [(3i)] causes a relative linear displacement of magnets [(2i)] with respect to the phase coils [(3i)]. In the linear motor in question, [said] the phase coils [(3i)] lie on an axis [(L)] that is perpendicular to the direction of motion.

[Attached Figure 3 is to be published.]

IN THE SPECIFICATION:

Paragraph beginning at page 3, line 19, has been amended as follows:

Figure 4 shows the arrangements of the parts of four conventional three-phase linear motors, arranged [side by side] end to end in such a way as to operate an equal number of stations of an operating unit;

Paragraph beginning at page 5, line 5, has been amended as follows:

BARTOLOTTI S.N. 09/885,464

By controlling each linear-motor unit 1, it is possible to manage to advantage the operations of each station in such a way as to coordinate them as required. A single glance clearly shows the difference in transverse bulk for a similar operating unit having four stations M1, M2, M3, M4 that are assisted by an equal number of linear motors 11 according to the state of the art as seen in Figure 4 (the three-phase linear motors are marked in their aggregate).

IN THE CLAIMS:

Claim 2 has been amended as follows:

2. (amended) Linear motor according to Claim 1, wherein [especially] said motor is of the multi-phase type and is designed in such a way that each phase coil [(3i)] acts on a different magnetic trace [(4n)] that is not the same as those of the other phase coils [(3i)].

Claim 3 has been amended as follows:

3. (amended) Linear motor according to Claim 1, wherein [in particular said motor does not have all] each of said phase coils [(3i) that] do not interact [on] with all the [group of] magnets [(12i)].